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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,415	08/25/2003	Michael E. Badding	SP03-110	4028
22928	7590	09/05/2006	EXAMINER	
CORNING INCORPORATED			CHU, HELEN OK	
SP-TI-3-1				
CORNING, NY 14831			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 09/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/648,415	Applicant(s) BADDING ET AL.	
	Examiner Helen O. Chu	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 10 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19, 24 and 25 is/are pending in the application.
- 4a) Of the above claim(s) 24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants' Amendments filed on July 10, 2006 have been received. Claims 1, 4, 9 and 12 are amended. Claims 20-23 have been withdrawn. Claims 24 and 25 are new.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action.

Election/Restrictions

3. Applicant's election with traverse of Species A and Species B in the reply filed on July 10, 2006 is acknowledged. The Applicants have amended their claims to incorporate Species B into Species A; therefore, Species A and Species B will be rejoined for examination. The Applicants have withdrawn the method claims of 20-23 from prosecution.
4. Newly submitted claim 24 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the recitation "covering at least one surface of said component" is considered another species from the original claims. The recitation in the new claims now limits the coating to be on at least one entire surface whereas the recitations in the claims prior have no such requirement.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 24 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

The requirement is still deemed proper and is therefore made FINAL.

Specification

5. The amendment filed on July 10, 2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: In regards to claims 4 and 12, the Specification shows no support for "at least 5 micrometer"; the Specification indicates the range is between 5 to 20 micrometers, which is very different from Applicants' amendment. In regards to claim 25, the Specification does not indicate a fuel cell device does not comprise a bipolar plate.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 4, 12 and 25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In regards to claims 4 and 12, the Specification shows no support for "at least 5 micrometer"; the Specification indicates

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the range is between 5 to 20 micrometers, which is very different from Applicants' amendment. In regards to claim 25, the Specification does not indicate a fuel cell device does not comprise a bipolar plate.

Claim Rejections - 35 USC § 102

8. The rejections under 35 U.S.C 102 (b), on claims 1-8, as anticipated by Quadakkers et al. are maintained. The rejection is repeated below for convenience.

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Quadakkers et al (US Patent 5,733,682).

11. In regards to claims 1, 5 and 8, the Quadakkers reference discloses a solid oxide fuel cell with a zirconia-based electrolyte with an anode and a cathode situated on an electrolyte that function at operating temperatures of 925 °C (Column 1, Lines 17-23). The Quadakkers reference also discloses a passage where chromium based alloys migrates and deposited on the surface of the electrode forming chromium-oxides (Column 4, Lines 24-26). The reference further discloses an aluminum oxide scale formed to protect and provide resistance to the highly conductive contact areas (Column 3, Lines 1-5)

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In regards to claims 2-6, 10-12, the Quadakkers reference teaches aluminum oxide coating (Column 4, Line 43) that is 20-200 μm thick (Column 3, Lines 8-11).

In regards to claim 7, the Quaddakers reference teaches 90% aluminum oxide layer is coated on a bipolar plate (Column 3, Line 46) and the bipolar plate is positioned next to the electrodes. It is therefore inherent that 90% of the electrode is not coated with chromium-based alloys or chromium oxides at the onset of the solid oxide fuel cell.

In regards to claims 13-15, the Quadakkers et al. reference discloses that chromium oxide forms on the surface of the frame during service temperatures of the fuel. Hence, there will be no percentages of chrome formed on the surface if only 100 percent of chromium oxide forms on the surface of the bipolar plate.

In regard to claim 9, 16-18 the Quadakkers et al. discloses the fuel cell device as taught above and further incorporated herein. The Quadakkers et al. further teaches that the bipolar plate is made of ferritic steel (Column 2, Line 47). Since the Quadakkers et al. reference shows a similar metal frame as that of the Applicants' claimed invention, the physical properties must also be similar.

The Quaddakers et al. reference teaches that the bipolar plate is a load bearing structure (Column 1, Lines 39-41), which is one of the functions of a frame. In addition, the Quaddakers et al. reference discloses that the fuel cell can be a single cell (Column 1, Line 32); this would prevent the bipolar plate to be an electrical connector and would only function as a frame. Fuel cell stacks are interconnected by bipolar plate with an anode of one cell in contact with one side of the bipolar plate and a cathode of a different cell in contact of the other side of a bipolar plate. Since the Quaddakers et al.

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reference indicates that the bipolar plate can be for a single cell that would prevent the plate to be an interconnector because there are no other cells in connection to the bipolar plate.

Response to Arguments

12. Applicant's arguments filed July 10, 2006 have been fully considered but they are not persuasive.

Applicants' principle arguments are:

A) A bipolar plate is an electrical active compound. Accordingly, claim 1 is not anticipated by this reference. That is, bipolar plates mechanically separate air from fuel, but also function as electrical conductors.

B) Claim 9 specifically states that the claimed component is a metal frame i.e. it is not a bipolar plate.

C) Accordingly, the subject matter of claim 24 is not anticipated, nor is it obvious over the cited reference, That is, the coating does not cover at least one surface of the bipolar plate, as claimed by the Applicant, Thus the subject matter of claim 24 is not anticipated, nor is it obvious over the cited reference.

In response to Applicants' arguments please consider the following:

A) First, it is known in the art that a bipolar plate cannot mechanically separate air from fuel. Air is one of the fuels for fuel cells. Secondly, the bipolar plate is electrically active but the metal oxide on the bipolar plate is not. Claim 1 state " a non-electrically active component situated in close proximity to said electrolyte."

The Quaddakers reference teaches a layer of metal oxide on the bipolar plate that is resistant to conductivity.

B) The Quaddakers et al. reference teaches a bipolar plate that is load bearing. A frame is by definition *a rigid structure formed of relatively slender pieces used as a major support in buildings, or engineering works, machinery, furniture etc.* The bipolar plate taught by Quaddakers et al. reference is by definition a frame.

C) Claim 24 is considered to be a different species then that of the original claims. The recitation "covering at least one surface of" would require the surface to be covered with the particular component and therefore this recitation would be different from the originally elected claims because there is no such requirement. As Applicants has admitted in their arguments.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen O. Chu whose telephone number is (571) 272-5162. The examiner can normally be reached on Monday-Friday 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HOC

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